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     (FILE 'HOME' ENTERED AT 07:18:41 ON 03 DEC 2001)

     FILE 'REGISTRY' ENTERED AT 07:18:49 ON 03 DEC 2001
L1         6266 (50<CU AND 19<ZN)/MAC

     FILE 'HCA' ENTERED AT 07:19:21 ON 03 DEC 2001
L2         8252 L1
L3       201829 (COPPER OR CU) AND (ZINC OR ZN)
L4         4213 L2 AND L3
L5        42775 INTERMETALLIC?
L6           78 L4 AND L5
                SELECT IPC L6 16 25 29 30 31 38 41 54 56
                SELECT PN L6 1-

     FILE 'WPIDS' ENTERED AT 08:02:20 ON 03 DEC 2001
L7        11682 E1-10
L8           34 E11-144
L9        11657 L7 NOT L8
L10          77 L9 AND (COPPER OR CU) AND (ZINC OR ZN) AND INTERMETAL?
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AN 1978-69877A [39] WPIDS
TI Wear resistant **copper** alloy for wrought prods. - contains nickel-aluminium, manganese-silicon, nickel-beryllium and/or nickel-silicon inter-metallic cpds. in **copper-zinc** alloy.
DC M26
PA (NISH-N) NIPPON SHINDO KK
CYC 1
PI JP 53097927 A 19780826 (197839)*
PRAI JP 1977-13209 19770208
AB JP 53097927 A UPAB: 19930901
Dispersion strengthening type wear resistant **Cu** alloy for wrought prod. consists (by wt) of <12% Ni, 55-65% **Cu**+Ni, 1-5% al, 2-4% Mn, 0.5-3% Si, <0.5% Be and the balance of **Zn**. The alloy has dispersed in its **Cu-Zn** series mother alloy phase >=2 **intermetallic** cpds. of Ni-Al, Mn-Si, Ni-Be and Ni-Si series.

Multiple effect of the **intermetallic** cpds. dispersed to ppte. in the mother phase improves wear resistance impact resistance and fatigue strength of the alloy. The Ni having properties analogous to **Cu** may be considered replaceable structurally with an equal amt. of **Cu**, contributes to strengthen the mother matrix, and forms **intermetallic** cpds. with Al, Be, and Si. Less than 12% Ni reduces fluidity of the alloy on casting. Limitation of **Cu**+Ni 55-65% is to made the alpha or alpha+beta mother phase.

AN 1982-50997E [25] WPIDS
TI Dispersion-strengthened brass alloy - includes aluminium, titanium and at least one of iron, nickel and cobalt.
DC M26
PA (MITV) MITSUBISHI METAL CORP
CYC 1
PI JP 57076143 A 19820513 (198225)* 4p
JP 59052944 B 19841222 (198504)
ADT JP 57076143 A JP 1980-152941 19801030
PRAI JP 1980-152941 19801030
AB JP 57076143 A UPAB: 19930915
Brass comprises 15-43% **Zn**, 0.5-10% Al, 0.5-6% Mn, 0.1-2% Si, 0.05-2.5% Ti, 0.05-2% Pb, 0.1-4% of one or more of Fe, Ni and Co, and the balance **Cu** and impurities. The brass may also contain 0.05-1% of one or more of Cr, Zr and V.

The brass is useful as a machine part to be operated under a high load condition, e.g. a synchroniser ring or bearing for a car. A known Mn-Si **intermetallic** cpd.-dispersed brass contains dendritic Mn-Si particles which elongate along its rolling direction. As a result, the prod. is likely to have anisotropic properties. This defect is now overcome by the coexistance of Ti and a Fe-gp. metal. The addn. of Ti and the Fe-gp. metal makes the Mn-Si **intermetallic** cpd. particles 'granular'. The **Zn** and Al change the alloy matrix into an alpha or alpha+beta phase. Consequently the alloy is improved in strength, toughness and wear resistance.

In an example, an alloy (18.4% **Zn**, 7.42% Al, 3.01% Mn, 0.81% Si, 0.53% Pb, 0.91% Ti, 2.05% Fe and **Cu**) had a tensile strength of 84.5 kg/sq.mm, an elongation of 12.4% and a low abrasion loss.

AN 1985-119123 [20] WPIDS
DNC C1985-051612
TI Shape memory alloy with improved cold workability and strength - consists of **copper**, aluminium, **zinc**, nickel and silicon and/or phosphorus.
DC M26
PA (FURU) FURUKAWA ELECTRIC CO LTD
CYC 1
PI JP 60059035 A 19850405 (198520)* 3p
JP 03006212 B 19910129 (199108)
ADT JP 60059035 A JP 1983-165737 19830908; JP 03006212 B JP 1983-165737 19830908
PRAI JP 1983-165737 19830908
AB JP 60059035 A UPAB: 19930925
0.01-0.50 wt.% Si and/or P are added to **Cu**-alloy contg. 0.05-10.0% Al, 9.0-40.0% **Zn**, and 0.30-2.0% Ni deposited fine **intermetallic** cpds. The cold workability is improved.

USE/ADVANTAGE - The alloy also has excellent shape memory effect and sample prod. had tensile strength of 96-112 kgf/mm2.

In an example 11.7% **Zn**, 8.39% Al, 0.66% Ni, were added to molten **Cu** in the graphite crucible to obtain 180-mm long bars and 150x200x25-mm3 ingots. Cold workability, tensile strength, and shape memorising ability were tested on the 8-mm dia. bar and 150x8-mm2 sheet cut. The shape memorisation was complete; no cracks formed at 80% cold working; the tensile strength was 112 kgf/mm2.
0/0

AN 1985-260465 [42] WPIDS
DNC C1985-112959
TI Wear resistant **copper** alloy - contains **zinc**, aluminium, manganese, iron and silicon.
DC M26
PA (KOBM) KOBE STEEL LTD
CYC 1
PI JP 60174843 A 19850909 (198542)* 4p
JP 62057700 B 19871202 (198751)
ADT JP 60174843 A JP 1984-31136 19840221; JP 62057700 B JP 1984-37136 19840221
PRAI JP 1984-31136 19840221; JP 1984-37136 19840221
AB JP 60174843 A UPAB: 19930925
Alloy consists by wt. of **Zn** 10-30%, Al 5-10%, Mn 0.5-5%, Fe 0.5-5%, Si 1-6%, and the balance **Cu** with incidental impurities. It includes Fe-Mn-Si ternary cpd. 1-12% with weight ratio Fe/Si and Mn/Si 0.3-14 respectively.

USE/ADVANTAGE - Synchronizer ring in automobile transmission mechanism used in severe sliding conditions. The Mn and Fe form not only Mn5Si3 and Fe3Si but also Fe-Mn-Si **intermetallic** cpds. to increase wear resistance of **copper** alloy more than the case of MnSi3. As compared with conventional alloy including Ti, Cr, Co, Zr, V, etc., the new alloy is competitive in wear resistance and improved in castability. **Zn** and Al restrict fuming of molten **copper** and pptn. of gamma-phase.
0/2

AN 1992-053806 [07] WPIDS
DNC C1992-024281
TI **Copper**-based sintered alloy with good wear resistance at high temps. - includes **zinc** in the alloy, with molybdenum-silicon **intermetallic** cpd., particles dispersed in it with specific void vol..
DC M22
PA (MITV) MITSUBISHI MATERIALS CORP
CYC 1
PI JP 04000340 A 19920106 (199207)*
PRAI JP 1990-100117 19900416
AB JP 04000340 A UPAB: 19931006
The alloy has a structure in which 1-15 vol.% Mo-Si **intermetallic** cpd. particles of 1-50 micron-mean particle size are uniformly dispersed, and 1-15 vol.% voids are distributed in the matrix of a **Cu** alloy comprising 10-40 wt.% **Zn** with balance **Cu** and incidental impurities.
USE - Used for valve guide members of internal combustion engines and bearing members of turbochargers.
0/1

AN 90:11051 HCA
TI Abrasion-resistant **copper** alloys
IN Takeuchi, Isao; Iwamura, Takuro; Kishida, Kunio; Komori, Shinichi; Shimizu, Eiji
PA Mitsubishi Metal Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53100913	A2	19780902	JP 1977-15474	19770217
	JP 58031381	B4	19830705		

AB The alloys contain Fe 1.5-7.5, Ti 1.0-5.0, Al 2.0-13.8%, and optionally **Zn** in amts. such that **Zn** + 4Al = 40.0-56.0%. They have excellent abrasion resistance, and toughness, and machinability due to pptn.-hardening by **intermetallic** compds. .ltoreq.10 .mu. in diam. When the alloys were homogenized at 650.degree. for 2 h and air-cooled, the tensile strengths were 64.4-79.5 kg/mm2 and elongations 4.0-25.1%. The abrasion was less at low speed.

AN 116:240185 HCA
TI Wear-resistant **copper** alloys
IN Ueno, Hirochika
PA Mitsuibishi Materials Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04013825	A2	19920117	JP 1990-113119	19900507
	JP 2745774	B2	19980428		

AB The **Cu** alloys contg. **Zn** 28-33, Al 4-5.5, Ni 2-3, Ti 1-2, and C 0.01-0.2% have structures of C-contg. **intermetallic** compds. minutely dispersed in matrixes. The **Cu** alloys are useful for structural members for vehicles, e.g. automobiles.

AN 120:60311 HCA
TI Free-cutting brass
IN Yamaji, Kenkichi; Kawanishi, Rokuro
PA Hitachi Alloy, Ltd., Japan
SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 560590	A2	19930915	EP 1993-301814	19930310
	EP 560590	A3	19940202		
	R: DE, ES, FR, GB, IT				
	JP 05255778	A2	19931005	JP 1992-86463	19920310
PRAI	JP 1992-86463		19920310		

AB The free-machining brass contains (1) Bi, mischmetal, and no Pb (2) Bi, mischmetal, and min. amt. of Pb. Restricting the Pb content decreases subsequent water pollution. Also, the Bi and Pb **intermetallic** compds. formed with mischmetal are uniformly dispersed. The brass compns. are **Cu** 57-61, Bi 0.5-4.0, mischmetal 0.05-0.9, and balance **Zn**, or **Cu** 57-61, (Bi + Pb) 0.5-4.0, mischmetal 0.05-0.5%, and balance **Zn**.

AN 116:9959 HCA
TI Sintered **copper-zinc** alloys with wear resistance at high temperatures
IN Akutsu, Hidetoshi; Kono, Toru; Otsuki, Masato
PA Mitsubishi Metal Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03036226	A2	19910215	JP 1989-171488	19890703
	JP 2745695	B2	19980428		

AB The **Cu** alloys suitable for engine parts contain **Zn** 5-25, Fe, Ni, and/or Co 0.1-3, O 0.01-0.5, and optionally Al 0.1-0.8, Mn 0.1-3, and/or Co, Mo, and/or W 0.1-2 wt.%. The microstructure includes fine oxides and **intermetallic** compds. dispersed in the alloy matrix having porosity of 1-15 vol.%. Thus, a sintered rod of **Cu** -20 **Zn**-0.1 Al-0.5 Fe-0.1 wt.% O alloy with the porosity of 5 vol.% showed wear loss of 43 .mu.m in a sliding test on steel, compared with 65 .mu.m for **Cu**-20 **Zn**-2.0 Ni-0.25 wt.% O alloy.

AN 116:9960 HCA
TI Sintered **copper** alloys with wear resistance at high temperatures
IN Akutsu, Hidetoshi; Kono, Toru; Otsuki, Masato
PA Mitsubishi Metal Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03036227	A2	19910215	JP 1989-171489	19890703
	JP 2745696	B2	19980428		

AB The **Cu**-base sintered alloys suitable for engine parts contain **Zn** 5-25, Si 0.1-2, Fe, Ni, and/or Co 0.1-3, O 0.01-0.5, and optionally Al 0.1-0.3 and/or Cr, Mo, and/or W 0.1-2 wt.%. The microstructure includes oxides and **intermetallic** compds. uniformly dispersed in the matrix having porosity of 1-15 vol.%. Thus, a sintered rod of **Cu**-10 **Zn**-0.4 Si-1.5 Fe-0.06 wt.% O alloy with porosity of 6 vol.% showed wear loss of 50 .mu.m in a sliding test a steel counterpart.

AN 116:199166 HCA
TI **Copper**-based sintered alloy with high wear resistance at high temperature for bearings of turbo-chargers and valve guides of engines
IN Teraoka, Toshio; Akutsu, Hidetoshi; Shimizu, Teruo
PA Mitsubishi Materials Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 04000341	A2	19920106	JP 1990-100118	19900416

AB The title **Cu**-based sintered alloy consists of a 10-40 wt.% **Zn**-contg. **Cu** alloy matrix and 1-15 vol.% of W-Si-based **intermetallic** compd. particles having 1-50 .mu.m av. particle size and dispersed uniformly in the matrix, and 1-15 vol.% of pores are distributed uniformly in the structure. The W-Si-type **intermetallic** compd. may be WFeSi, WNiSi, and/or WCoSi. The alloy is esp. useful for valve guides of high output internal combustion engines owing to thermal cond., burning resistance, and high wear resistance.